AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended) An isolated antibody or epitope-binding fragment thereof that specifically binds CD33, comprising a heavy chain variable region and a light chain variable region, wherein said heavy chain variable region comprises heavy chain complementarity-determining regions having ~~an~~ the amino acid sequences of SEQ ID NOs: 1-3.

2. (currently amended) An isolated antibody or epitope-binding fragment thereof that specifically binds CD33, comprising at least one heavy chain variable region and at least one light chain variable region, wherein said heavy chain variable region comprises three complementarity-determining regions having ~~an~~ the amino acid sequences of SEQ ID NOs:1-3, and wherein said light chain variable region comprises three complementarity-determining regions having the amino acid sequences of SEQ ID NOs:4-6.

3. (currently amended) An isolated antibody or epitope-binding fragment thereof that specifically binds CD33, comprising at least one heavy chain variable region and at least one light chain variable region, wherein said heavy chain variable region has at least 90% sequence identity to ~~an~~ the amino acid sequence of SEQ ID NO:7.

4. (currently amended) An isolated antibody or epitope-binding fragment thereof that specifically binds CD33, comprising at least one heavy chain variable region and at least one

light chain variable region, wherein said heavy chain variable region has at least 95% sequence identity to ~~an~~ the amino acid sequence of SEQ ID NO:7.

5. (currently amended) The antibody or epitope-binding fragment thereof of claim 2, wherein said heavy chain variable region comprises ~~an~~ the amino acid sequence of SEQ ID NO:7.

6. (currently amended) An isolated antibody or epitope-binding fragment thereof that specifically binds CD33, comprising at least one heavy chain variable region and at least one light chain variable region, wherein said light chain variable region has at least 90% sequence identity to ~~an~~ the amino acid sequence of SEQ ID NO:8.

7. (currently amended) An isolated antibody or epitope-binding fragment thereof that specifically binds CD33, comprising at least one heavy chain variable region and at least one light chain variable region, wherein said light chain variable region has at least 95% sequence identity to ~~an~~ the amino acid sequence of SEQ ID NO:8.

8. (currently amended) The antibody or epitope-binding fragment thereof of claim 2, wherein said light chain variable region comprises ~~an~~ the amino acid sequence of SEQ ID NO:8.

9. (currently amended) An isolated antibody or epitope-binding fragment thereof that specifically binds CD33, comprising at least one heavy chain variable region and at least one

light chain variable region, wherein said heavy chain variable region has at least 90% sequence identity to ~~an~~ the amino acid sequence of SEQ ID NO:9.

10. (currently amended) An isolated antibody or epitope-binding fragment thereof that specifically binds CD33, comprising at least one heavy chain variable region and at least one light chain variable region, wherein said heavy chain variable region has at least 95% sequence identity to ~~an~~ the amino acid sequence of SEQ ID NO:9.

11. (currently amended) The antibody or epitope-binding fragment thereof of claim 2, wherein said heavy chain variable region comprises ~~an~~ the amino acid sequence of SEQ ID NO:9.

12. (currently amended) An isolated antibody or epitope-binding fragment thereof that specifically binds CD33, comprising at least one heavy chain variable region and at least one light chain variable region, wherein said light chain variable region has at least 90% sequence identity ~~to an~~ the amino acid sequence of SEQ ID NO:10.

13. (currently amended) An isolated antibody or epitope-binding fragment thereof that specifically binds CD33, comprising at least one heavy chain variable region and at least one light chain variable region, wherein said light chain variable region has at least 95% sequence identity to ~~an~~ the amino acid sequence of SEQ ID NO:10.

14. (currently amended) The antibody or epitope-binding fragment thereof of claim 2, wherein said light chain variable region comprises ~~an~~ the amino acid sequence of SEQ ID NO:10.

15. (currently amended) A purified antibody or epitope-binding fragment thereof that specifically binds to CD33, wherein the heavy chain variable region portion of said antibody or epitope-binding fragment comprises ~~an~~ the amino acid sequence of SEQ ID NO:7

and wherein the light chain variable region portion of said antibody or epitope-binding fragment comprises ~~an~~ the amino acid sequence of SEQ ID NO:8.

16. (currently amended) A humanized or resurfaced antibody, or an epitope-binding fragment thereof, that specifically binds to CD33, wherein the heavy chain variable region portion of said antibody or epitope-binding fragment comprises ~~an~~ the amino acid sequence of SEQ ID NO:9

and wherein the light chain variable region portion of said antibody or epitope-binding fragment comprises ~~an~~ the amino acid sequence of SEQ ID NO:10.

17. (original) An immunoconjugate comprising the antibody or epitope-binding fragment thereof of claim 1 linked to a drug or prodrug.

18. (previously presented) An immunoconjugate comprising the antibody or epitope-binding fragment thereof of claim 2 linked to a drug or prodrug.

19. (previously presented) The immunoconjugate of claim 17, wherein said drug or prodrug is selected from the group consisting of a maytansinoid, a taxoid, CC-1065, a CC-1065 analog, dolastatin, a dolastatin analog, methotrexate, daunorubicin, doxorubicin, vincristine, vinblastine, melphalan, mitomycin C, chlorambucil, and calicheamicin.

20. (previously presented) The immunoconjugate of claim 18, wherein said drug or prodrug is selected from the group consisting of a maytansinoid, a taxoid, CC-1065, a CC-1065 analog, dolastatin, a dolastatin analog, methotrexate, daunorubicin, doxorubicin, vincristine, vinblastine, melphalan, mitomycin C, chlorambucil, and calicheamicin.

21. (original) A composition comprising the antibody or epitope-binding fragment thereof of claim 1 and a drug or prodrug.

22. (previously presented) A composition comprising the antibody or epitope-binding fragment thereof of claim 2 and a drug or prodrug.

23. (original) A pharmaceutical composition comprising the antibody or epitope-binding fragment thereof of claim 1, and a pharmaceutically acceptable agent.

24. (previously presented) A pharmaceutical composition comprising the antibody or epitope-binding fragment thereof of claim 2, and a pharmaceutically acceptable agent.

25. (original) A pharmaceutical composition comprising the immunoconjugate of claim 17, and a pharmaceutically acceptable agent.

26. (previously presented) A pharmaceutical composition comprising the immunoconjugate of claim 18, and a pharmaceutically acceptable agent.

27. (original) A pharmaceutical composition comprising the composition of claim 21, and a pharmaceutically acceptable agent.

28. (previously presented) A pharmaceutical composition comprising the composition of claim 22, and a pharmaceutically acceptable agent.

29. (original) A diagnostic reagent comprising the antibody of claim 1, wherein said antibody or antibody fragment is labeled.

30. (previously presented) A diagnostic reagent comprising the antibody of claim 2, wherein said antibody or antibody fragment is labeled.

31. (original) The diagnostic reagent of claim 29, wherein said label is selected from the group consisting of a biotin label, an enzyme label, a radio-label, a fluorophore, a chromophore, an imaging agent and a metal ion.

32. (previously presented) The diagnostic reagent of claim 30, wherein said label is selected from the group consisting of a biotin label, an enzyme label, a radio-label, a fluorophore, a chromophore, an imaging agent and a metal ion.

33. (withdrawn) A method for inhibiting the growth of a cell expressing CD33 comprising contacting said cell with the antibody or epitope-binding fragment thereof of claim 1 or 2.

34. (withdrawn) A method for inhibiting the growth of a cell expressing CD33 comprising contacting said cell with the immunoconjugate of claim 17 or 18.

35. (withdrawn) A method for inhibiting the growth of a cell expressing CD33 comprising contacting said cell with the composition of claim 21 or 22.

36. (withdrawn) A method for inhibiting the growth of a cell expressing CD33 comprising contacting said cell with a pharmaceutical composition selected from claims 23-28.

37. (withdrawn) A method for treating a subject having a disease wherein CD33 is expressed, comprising administering to said subject an effective amount of the antibody or epitope-binding fragment thereof of claim 1 or 2.

38. (withdrawn) A method for treating a subject having a disease wherein CD33 is expressed, comprising administering to said subject an effective amount of the immunoconjugate of claim 17 or 18.

39. (withdrawn) A method for treating a subject having a disease wherein CD33 is expressed, comprising administering to said subject an effective amount of the composition of claim 21 or 22.

40. (withdrawn) A method for treating a subject having a disease wherein CD33 is expressed, comprising administering to said subject an effective amount of the pharmaceutical composition of claim 23 or 24.

41. (withdrawn) A method for treating a subject having a disease wherein CD33 is expressed, comprising administering to said subject an effective amount of the pharmaceutical composition of claim 25 or 26.

42. (withdrawn) A method for treating a subject having a disease wherein CD33 is expressed, comprising administering to said subject an effective amount of the pharmaceutical composition of claim 27 or 28.

43. (withdrawn) A method for treating a subject having a disease wherein CD33 is expressed, comprising contacting one or more cells of said subject *ex vivo* with an effective amount of the antibody or epitope-binding fragment thereof of claim 1 or 2.

44. (withdrawn) A method for treating a subject having a disease wherein CD33 is expressed, comprising contacting one or more cells of said subject *ex vivo* with an effective amount of an immunoconjugate of claim 17 or 18.

45. (withdrawn) A method for treating a subject having a disease wherein CD33 is expressed, comprising contacting one or more cells of said subject *ex vivo* with an effective amount of a composition of claim 21 or 22.

46. (withdrawn) A method for treating a subject having a disease wherein CD33 is expressed, comprising contacting one or more cells of said subject *ex vivo* with an effective amount of a pharmaceutical composition selected from claims 23-28.

47. (withdrawn) The method of treatment of claim 37, wherein said disease is a disease selected from the group consisting of myelodysplastic syndrome (MDS), acute myeloid leukemia (AML), chronic myeloid leukemia (CML) and pro-myelocytic leukemia (PML).

48. (withdrawn) The method of treatment of claim 38, wherein said disease is a disease selected from the group consisting of myelodysplastic syndrome (MDS), acute myeloid leukemia (AML), chronic myeloid leukemia (CML) and pro-myelocytic leukemia (PML).

49. (withdrawn) The method of treatment of claim 39, wherein said disease is a disease selected from the group consisting of myelodysplastic syndrome (MDS), acute myeloid leukemia (AML), chronic myeloid leukemia (CML) and pro-myelocytic leukemia (PML).

50. (withdrawn) The method of treatment of claim 40, wherein said disease is a disease selected from the group consisting of myelodysplastic syndrome (MDS), acute myeloid leukemia (AML), chronic myeloid leukemia (CML) and pro-myelocytic leukemia (PML).

51. (withdrawn) The method of treatment of claim 41, wherein said disease is a disease selected from the group consisting of myelodysplastic syndrome (MDS), acute myeloid leukemia (AML), chronic myeloid leukemia (CML) and pro-myelocytic leukemia (PML).

52. (withdrawn) The method of treatment of claim 42, wherein said disease is a disease selected from the group consisting of myelodysplastic syndrome (MDS), acute myeloid leukemia (AML), chronic myeloid leukemia (CML) and pro-myelocytic leukemia (PML).

53. (withdrawn) The method of treatment of claim 43, wherein said disease is a disease selected from the group consisting of myelodysplastic syndrome (MDS), acute myeloid leukemia (AML), chronic myeloid leukemia (CML) and pro-myelocytic leukemia (PML).

54. (withdrawn) The method of treatment of claim 44, wherein said disease is a disease selected from the group consisting of myelodysplastic syndrome (MDS), acute myeloid leukemia (AML), chronic myeloid leukemia (CML) and pro-myelocytic leukemia (PML).

55. (withdrawn) The method of treatment of claim 45, wherein said disease is a disease selected from the group consisting of myelodysplastic syndrome (MDS), acute myeloid leukemia (AML), chronic myeloid leukemia (CML) and pro-myelocytic leukemia (PML).

56. (withdrawn) The method of treatment of claim 46, wherein said disease is a disease selected from the group consisting of myelodysplastic syndrome (MDS), acute myeloid leukemia (AML), chronic myeloid leukemia (CML) and pro-myelocytic leukemia (PML).

57. (withdrawn) A method of determining whether a biological sample contains a myelogenous cancer cell, comprising:

(a) contacting said biological sample with a diagnostic reagent of claim 29 or 30, and

(b) detecting the distribution of said reagent within said sample.

58. (previously presented) The method of claim 57, wherein said myelogenous cancer cell is a cell of a cancer selected from the group consisting of acute myeloid leukemia (AML), chronic myeloid leukemia (CML) and pro-myelocytic leukemia (PML).

59. (previously presented) An antibody or epitope-binding fragment thereof having increased binding affinity for CD33, said antibody or antibody fragment prepared by:

(a) providing a DNA molecule that encodes an antibody or epitope-binding fragment thereof that specifically binds to CD33, comprising at least one of a heavy chain variable region as set forth in SEQ ID NO:7 and a light chain variable region as set forth in SEQ ID NO:8,

(b) introducing at least one nucleotide mutation, deletion, insertion or addition into said DNA molecule such that the amino acid sequence of said

antibody or epitope-binding fragment thereof encoded by said DNA molecule is altered;

(c) expressing an antibody or epitope-binding fragment thereof from said altered DNA molecule of (b);

(d) screening the antibody or epitope-binding fragment of (c) for increased binding affinity for CD33 compared to an antibody or epitope-binding fragment expressed from the DNA molecule of (a),

(e) identifying an antibody or epitope-binding fragment having increased binding affinity for CD33 of (d), thereby preparing an antibody or epitope-binding fragment thereof having increased binding affinity for CD33.

60. (previously presented) An antibody or epitope-binding fragment thereof having increased binding affinity for CD33, said antibody or antibody fragment prepared by:

(a) providing a DNA molecule that encodes an antibody or epitope-binding fragment thereof that specifically binds to CD33, comprising at least one of a heavy chain variable region as set forth in SEQ ID NO:9 and a light chain variable region as set forth in SEQ ID NO:10,

(b) introducing at least one nucleotide mutation, deletion, insertion or addition into said DNA molecule such that the amino acid sequence of said antibody or epitope-binding fragment thereof encoded by said DNA molecule is altered;

(c) expressing an antibody or epitope-binding fragment thereof from said altered DNA molecule of (b);

(d) screening the antibody or epitope-binding fragment of (c) for increased binding affinity for CD33 compared to an antibody or epitope-binding fragment expressed from the DNA molecule of (a),

(e) identifying an antibody or epitope-binding fragment having increased binding affinity for CD33 of (d), thereby preparing an antibody or epitope-binding fragment thereof having increased binding affinity for CD33.

61. (cancelled).

62. (previously presented) The antibody or antibody fragment having increased binding affinity for CD33 of claim 59 or 60, wherein said at least one nucleotide mutation, deletion, insertion or addition is made by a method selected from the group consisting of oligonucleotide-mediated site-directed mutagenesis, cassette mutagenesis, error-prone PCR, DNA shuffling and use of mutator-strains of *E. coli*.

63. (withdrawn) An isolated polynucleotide encoding the antibody or epitope-binding fragment thereof of claim 1 or 2.

64. (withdrawn-previously presented) An isolated polynucleotide encoding a heavy chain of the antibody or epitope-binding fragment thereof of claim 1, or encoding a light or heavy chain of the antibody or epitope-binding fragment thereof of claim 2.

65. (withdrawn) A recombinant vector comprising the polynucleotide of claim 63.

66. (withdrawn) A recombinant vector comprising the polynucleotide of claim 64.

67. (withdrawn) A host cell transformed with the recombinant vector of claim 65.

68. (withdrawn) A host cell transformed with the recombinant vector of claim 66.

69. (withdrawn) A method for producing an antibody or epitope-binding fragment thereof having the ability to bind CD33, said method comprising (a) culturing a host cell as claimed in claim 67 under conditions such that said host cell expresses the antibody or epitope-binding fragment, and (b) collecting the antibody or epitope-binding fragment so expressed.

70. (withdrawn) A method for producing an antibody or epitope-binding fragment thereof having the ability to bind CD33, said method comprising (a) culturing a host cell as claimed in claim 68 under conditions such that said host cell expresses the antibody or epitope-binding fragment, and (b) collecting the antibody or epitope-binding fragment so expressed.

71. (withdrawn) A method for obtaining CD33 from a biological material, said method comprising:

(a) contacting a biological material with the antibody or epitope-binding fragment thereof of claim 1 or 2,

(b) permitting the antibody or epitope-binding fragment of claim 1 or 2 to bind to CD33 in said biological material, and

(c) isolating the antibody or epitope-binding fragment bound to CD33 from the biological material, thereby obtaining CD33 from a biological material.